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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,444	03/30/2004	T. Mark McCleskey	S-100,544	3386

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EXAMINER

SODERQUIST, ARLEN

ART UNIT PAPER NUMBER

1743

DATE MAILED: 01/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/812,444

Applicant(s)

MCCLESKEY ET AL.

Examiner

Arlen Soderquist

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11,13-15,20 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7,9-11,13 and 15 is/are allowed.
- 6) ☒ Claim(s) 20 and 21 is/are rejected.
- 7) ☒ Claim(s) 8,14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. Applicant's election of Groups I and II in the reply filed on October 31, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

3. Claim 8 is objected to because of the following informalities: the fluorescent indicator is listed twice in the claim. Appropriate correction is required.

4. Claim 14 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 10 requires an amino acid buffer which has a scope that is narrower than the amine buffer of claim 14.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumiya in view of Sill. In the paper Matsumiya teaches a fluorescence reagent, 10-

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hydroxybenzo[h]quinoline-7-sulfonate (HBQS), for selective determination of beryllium(II) ion at pg cm^{-3} levels. A facile method was developed for the highly sensitive, selective determination of ultra-trace Be^{2+} using the fluorimetric reagent under extremely alkaline conditions, at pH 12.0. This reagent is quite suitable for the very small ion, Be^{2+} , to form a 6-membered chelate ring, compatible with a high fluorescence yield. Chelate stoichiometry is 1:1 for Be-HBQS at pH 12.0. The calibration graph gave a wide linear dynamic range, 2-100 nmol/dm^3 Be^{2+} with a detection limit (3s blank) of 0.52 nmol/dm^3 (4.7 pg/cm^3). Excellent sensitivity and toughness toward the matrix influence were demonstrated using the artificial sample solutions for airborne dust. Coupled with a simple masking procedure using EDTA, the method enables Be^{2+} determination at nanomolar concentrations in the presence of metals at the natural abundance levels in airborne dust, typically Al, Ca, Cu, Fe, Mg, Pb, and Zn at 130, 150, 1.0, 70, 33, 3.0, and 8.0 mmol/dm^3 , respectively, in the final solution. The proposed method was successfully used to determine Be in urban air. Page 2083 teaches the reagent being prepared by dissolving it in a slightly alkaline aqueous solution. The same page teaches heating a nitric acid solution for dissolution of the dust containing sample to bring it into solution. Matsumiya does not teach a buffer for the indicator solution.

In the paper Sill teaches fluorometric determination of submicrogram quantities of beryllium. The increasing use of Be in the atomic energy program and the highly toxic nature of its compounds require a method of high sensitivity and reliability for its detection and determination. Although morin was the most sensitive reagent known at that time for the determination of Be, the available procedures were not particularly reliable at extremely low levels. A fluorometric method with morin was developed that had a detection limit of 0.0004 γ and a precision to 0.8% on 0.2 γ at the 95% confidence level. Reliability and precision were improved greatly through the use of a buffer system (page 598 and 601), an internal acid-base indicator, a permanent glass standard of fluorescence, and complexing agents. Detailed methods of separation of Be and application to air-dust and smear samples, urine, bone, ores and steel are given. They were checked at each step by using Be^7 as a tracer. The buffer system used was an amine buffer, piperidine, (page 599) at a pH of about 11.5 (page 601).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a buffer as taught by Sill in the Matsumiya composition and method because of the reduced affect from changes in alkalinity as taught by Sill.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumiya in view of Sill as applied to claim 20 above, and further in view of Missel. Matsumiya does not teach ammonium bifluoride as the dissolution solution.

In the paper Missel discusses chemical milling of beryllium in which a chemical solution is used to dissolve or etch material from an object. The second paragraph of page 69 teaches that the etching rate of NH_4 bifluoride baths is reasonable and easier to control than that of H_2SO_4 baths. The acid etch gives a smoother surface, but the bifluoride etch has less tendency to create deep pits. The third paragraph of the same page teaches that the etch rate for nitric acid is too slow. Additionally table 1 shows that the temperature is about ambient temperature.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the ammonium bifluoride of Missel as the dissolution solution in the Matsumiya method because of its reasonable removal rate and greater ease of control as taught by Missel.

8. Claims 1-7, 9-11, 13 and 15 are allowed.

9. Applicant's arguments filed October 31, 2005 have been fully considered but they are not persuasive. Relative to claims 20 and 21 examiner notes that the primary reference performs the analysis in the absence of titration. This meets the negative limitation of claim 20. one of skill in the art would have been capable of simply adding the Sill buffer to the Matsumiya process without adding a titration step. Thus claim 20 is fully suggested by the combination of Matsumiya in view of Sill. Thus for claim 21 this is not a problem and the combination of Matsumiya in view of Sill and Missel fully suggest that claim. It is noted that the newly cited Chaudhuri reference clearly shows the ability of one of ordinary skill in the art to appropriately modify gravimetric, titrimetric and spectrometric assay methods with a similar change. Thus this reference is evidence that would support examiner's position above relative to claims 20-21.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additionally cited art relates to methods and compositions for measuring and dissolving beryllium.

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11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arlen Soderquist whose telephone number is (571) 272-1265. The examiner can normally be reached on Monday-Thursday and Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Arlen Soderquist
Primary Examiner